EXAMINATION OF THE SPINE

Learning outcomes

1. Gain confidence in taking an effective history from an MSK patient, including eliciting red flags and psychosocial flags.
2. Be able to demonstrate focused examination of the MSK patient.
3. Practice explanation of the diagnosis.
4. Formulate a management plan, including appropriate investigations, referral, safety net and follow-up.
A case of lower back and leg pain

Trevor, warehouse worker

- Developed worsening back pain over two months. Pain is mainly in lower back with some also in the right thigh
- Moving a pallet of books and felt his back 'go'. Had an acute pain in right side of back but managed to finish shift at work
- Took a few days off work to rest but then had to go back due to job worries. Thought the pain would go away but it hasn’t
- Stiffness lasts about 20 minutes and then eases
- No sensory changes and the right leg feels a little weak
- Not cough / sneeze sensitive
- Normal bowel and bladder function
- Impacting on personal life now – struggling to play with kids and affecting mood
- Otherwise fit and healthy
Lower back pain and sciatica: Let's set the scene!

1 in 3 adolescents experience lower back pain

7% of consultations

Compromise of roles between being upright and being able to bend and twist, so everyone gets it

1 in 3 adolescents experience lower back pain

7% of consultations

Don't over medicalise

50% of cases start with no obvious mechanism of injury (think about history)

Frequently recurs and 11% of men and 16% of women have persistent pain and disability

Best predictor of malignancy:
- Past medical history of cancer
- Unexplained weight loss
- Not following an expected clinical course
- 'GUT FEEL'

Usually felt in the lumbar area (load) and cervical area (movement); increased clinical suspicion if thoracic pain is present

What is sciatica?

• = Spinal nerve root irritation (not any leg pain!)
• Our discs change as we get older (we shrink!)
• In middle age (30-50) most sciatica is disc-induced e.g. disc prolapse
• After this our discs dry out and become less likely to bulge/prolapse
• Facet joint hypertrophy in the elderly is often a contributing factor
• 90% of disc prolapses happen at L5 or S1 level (i.e. refer to dermatomes 'below the knee')

Prognosis

Most people recover within approximately 6 weeks.

Sciatica has a worse prognosis than LBP, with 30% of patients having clinically significant symptoms at 12 months.

We can’t usually explain pain and prognosis by imaging.

The prognosis for ‘disability’ is more dependent on pain behaviours than pathology; this can be predicted using the STarT tool, as per NICE guidelines.

People who are disabled by their back pain tend to worry too much about their back and/or not moving enough (what we say really matters).

Positive messages:
• Hurt does not mean harm
• Keep moving
• You don’t need to be 100% to return to activity/work

If prognosis is mainly due to pain behaviours rather than pathology, what is the role of the back examination?

• Patients expect to be examined—it personalises care to their body!
• Medically we should examine
• We don’t miss ‘deformity’ e.g. osteoporotic fracture/scoliosis and other unusual conditions such as shingles / masses etc
• Identify fear/avoidance around movement
• Confirm nerve root involvement as this opens up possibility of a medical model of care e.g. injections or surgery.
• Allows us to deliver our explanation from a position of strength and start the process of challenging yellow flags: IT BUILDS TRUST
• Helps us manage ‘imaging’ demands


30/09/2022
**Structure of a GP consultation**

- ✓ Exclude red flags (cancer, infection, fracture, cauda equina)
  - ✓ Exclude inflammatory back pain
  - ✓ Differentiate ‘nerve’ pain (sciatica) from referred leg pain
- ✓ Stratify risk of disability (yellow flags)
  - ✓ Manage the patient as per NICE guidelines

**Question:** Do you think this patient has any red flag symptoms?

A. Yes  
B. Unsure  
C. No
Back pain red flags

Key red flags for identifying fractures are:
• Older age (>65 years)
• Prolonged use of corticosteroids
• Severe trauma
• Presence of a contusion or abrasion

Best predictor of malignancy:
• PMH of cancer
Be alert to other diagnoses if:
• Unexplained weight loss
• Not following an expected clinical course
• ‘GUT FEEL’

Cauda equina syndrome

Cauda Equina Syndrome Warning Signs
• Loss of feeling pins and needles between your inner thighs or genitals
• Numbness in or around your back passage or buttocks
• Altered feeling when using toilet paper to wipe yourself
• Increasing difficulty when you try to urinate
• Increasing difficulty when you try to stop or control your flow of urine
• Loss of sensation when you pass urine
• Leaking urine or recent need to use pads
• Not knowing when your bladder is either full or empty
• Inability to stop a bowel movement or leaking
• Loss of sensation when you pass a bowel motion
• Change in ability to achieve an erection or ejaculate
• Loss of sensation in genitals during sexual intercourse

• A frequently missed surgical emergency
• Know your local pathway!
• NB a digital rectal examination is not needed for diagnosis but perianal sensory testing is useful
  • (draft CE national pathway)

http://www.eoemservice.nhs.uk/advice-and-leaflets/lower-back/cauda-equina
Indications for surgery

**Emergency**
- Cauda equina
- Foot drop (L4) or inability to plantar flex/stand on tip-toes (S1)
- Progressive neurological symptoms
- Patients with signs of myelopathy consistent with central cord compromise

**Elective**
- Acute severe radicular pain not showing any improvement with conservative measures by six weeks (some improvement is likely to imply eventual resolution)
- Refractive longer-term radicular pain (>3 months)
- Significant spinal claudication

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Question: Does this patient have inflammatory back pain?

A. Yes  
B. Unsure  
C. No  

Daily variations in pain associated with an underlying disorder

- Osteoarthritis
- Inflammatory
- Mechanical
- Persistent (chronic) pain or red flags
**Axial and Peripheral Spondyloarthropathies (NICE NG65 Feb. 2017)**

**HLA B27 testing is back!**

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Question: Does this patient have sciatica?

A. Yes
B. Unsure
C. No

Is this sciatica?

- Often starts with back pain that settles to be replaced by acute leg pain; may have had recurrent episodes of LBP over preceding years
- Pain generally radiates to foot or toes (L5/S1)
- Numbness and paraesthesia in the same distribution
- Nerve irritation signs: Valsalva/cough/sneeze
- Reduced SLR/slump which reproduces leg pain
- Motor, sensory or reflex changes; limited to one nerve root
Matrix for examination of lumbar spine

- **LOOK**: limp or obvious deformity (e.g. scoliosis, kyphosis, lordosis, pelvic shift, scars/wasting/rash)
- **FEEL**: feel spinous processes, paraspinal muscle tender points
- **MOVE**: extension, lateral flexion, flexion
- **TEST**: tell the patient you are going to check how the nerves in their back are working
- Ask the patient to: stand on tip toes (S1), stand on heels (L4), then move to a sitting position
- Big toe dorsiflexion (L5): “pull your big toe up towards you”
- Check reflexes: ankle jerk (L5/S1), knee (L3/4), check sensation
- SLUMP test
- Then ask the patient to lie on their back and check: SLR, screen hip, LLD, Babinski, peripheral pulses as relevant
- Consider checking other parts of body, e.g. abdomen, breast, prostate

Lower limb dermatomes diagrams purchased from Netter images, [https://netterimages.com/images/vpv000000067/67918-0550x0475.jpg](https://netterimages.com/images/vpv000000067/67918-0550x0475.jpg)

**Slump Test**

© Dr. Joe Muscolino ([www.learnmuscles.com](http://www.learnmuscles.com))

*art by Giovanni Rimasti*
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Question: Do you currently use STaRTBack?

A. Yes
B. Unsure
C. No
The STarT Back tool

Use of the STarT Back tool shown below is recommended in the NICE guidelines.

Treatment packages

Low Risk: advice including patient information leaflets, reassurance, medication

Medium Risk: good quality physiotherapy

High Risk: enhanced package of care using the biopsychosocial approach
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**Prescribing in LBP / Sciatica**

‘Pursue success but expect failure’

- Establish baseline pain score e.g. VAS
- Set realistic drug success (40% max reduction)
- Drugs should be one component of an individualised and holistic plan which should also include self-help and MDT input e.g. physiotherapy, relaxation, CBT etc

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**Managing sciatica**

**Consider pain relief options**

**Acute sciatica (<3 months) – limited use of medication**
- NSAIDs + PPI (be aware of limited evidence and risk of harm)
- Amitriptyline (research recommendation)
- Opioids (have plan to stop medication before 3 months)
- Do not use gabapentinoids, oral steroids or benzodiazepines

**Chronic sciatica (3+ months)**
- Do not use gabapentinoids or opioids for chronic low back pain or chronic sciatica

Role of imaging?

**X-ray**
- Bony pathology (e.g. malignancy, fracture, spondylolisthesis)
- Perform in young and old at presentation
- Sacroiliac joints (SIJs)
- No information regarding neurological tissue

**MRI**
- Neurological tissue visualisation
- Inflammation, infection, malignancy
- Bony pathology

If it’s broken, you don’t always have to fix it!

A range of ‘positive’ findings on MRI scans (and X-rays) are found in the ‘normal’ population

**Tips for better use of the fit note**

**Work within your competencies**
- ‘Occupational health opinion would be helpful’
- ‘Uncertain of adaptations possible – advise discussing it at work’

**Specifics – ‘can do……….’**
- ‘Desk-based duties possible’
- ‘Fit for any walking or seated duties’
- ‘Upper limbs have full function’

**Specifics – ‘avoid…………..’**
- ‘Avoid loaded rotation at the trunk’
- ‘Avoid manual work above shoulder height’ (shoulders)
- ‘Avoid lifting from the floor’

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**Useful patient resources**

What should I know about back pain?

**How your back works**
Back pain is a very common problem and will affect many of us at some point during our lives.

The good news is that in most cases it isn’t a serious problem, and it might just be caused by simple strain to a muscle or ligament.

As far as possible it’s best to continue with your normal everyday activities as soon as you can and to keep moving.

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Download free from Versus Arthritis website
**Question:** Do you feel more confident to deal with this patient now?

A. Yes
B. Maybe, but I would like more practice
C. No

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**Upcoming MSK training courses**

Details of upcoming MSK online webinars and training courses:

- Is it inflammatory arthritis or fibromyalgia syndrome or both? webinar: Thursday 20 October 6:30-8:30pm, £25
- Core Skills in MSK Care digital course: Thursday 2, 9, 16, 23 November 6:30-8:30pm, £135
- Managing chronic pain in primary care webinar: Wednesday 30 November 6:30-8:30pm, £25
- Core Skills in MSK Care digital course: Wednesday 2, 9, 16, 23 March 2023 6:30-8:30pm, £135
- For more information about the courses please visit the Versus Arthritis stand or visit [www.versusarthritis.org/coreskills](http://www.versusarthritis.org/coreskills)
Thank you...

Any questions?